

## ABSTRACT

The invention relates to a gene, *dep*, which confers resistance to the antibacterial activity of 4,5-dihydroxy-2-cyclopenten-1-one (DHCP). The invention further relates to the putative protein encoded by *dep*, which is a hydrophobic, transmembrane efflux protein specific for DHCP. The invention further relates to plasmids containing the *dep* gene, and to bacterial cells expressing *dep*. Furthermore, the invention provides applications for use in conferring resistance to antibacterial activity in organisms. The *dep* gene can be used to identify compounds which inhibit the efflux activity responsible for the resistance to DHCP or to compounds which are functionally equivalent to DHCP.